

# BEST AVAILABLE COPY

Appln. No. 09/905,716

Amendment Date: February 17, 2005

Reply to Office Action of November 17, 2004

## Amendments to the Claims:

This listing of claims will replace all prior versions, and will replace listings, of claims in the application.

### Listing of Claims:

1. (Rewritten) A receiver for receiving and efficiently separating a composite 3-G wireless communications signal into its constituent base-band components, wherein said receiver combines multiple processing tasks of a conventional receiver into a single entity, said single entity performs the processing required for multiple channels in a single device, comprising,

a resampling polyphase filter bank wherein tasks of spectral translation, bandwidth reduction and of interpolation to change sample rate by a rational ratio are embedded, and

a single polyphase filter operates in a resampling mode so that the input and output sample rates are different.

Cancel Claim 2.

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3. (Rewritten) A receiver for receiving and efficiently separating a composite wireless communications signal into its constituent base-band components, wherein said receiver combines multiple processing tasks of a conventional receiver into a single entity, said single entity performs the processing required for multiple channels in a single device, comprising,

a filtering process for changing the sample rate therewithin to induce spectral aliasing of multiple spectral centers, and

intentional aliasing is invoked as a replacement for the input down conversion of each channel in a conventional receiver structure.

4. (Amended). A receiver structure that embeds both sample rate changes of the input data and sample rate changes of the output data, wherein interaction of the two sample rate changes is absorbed in [the] a polyphase filter as a scheduling of input data samples being delivered to [-] elected filter registers, comprising,

[the] polyphase partitioned filter weights are simultaneously reassigned to different filter registers for computation of register outputs, and

selected registers may not receive input samples when directed to deliver output samples.

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5. A receiver as claimed in claim 4 comprising,

structure that collects samples computed from a polyphase partitioned filter and

performs phase rotations and summations to separate the multiple aliases caused by

resampling, and residing in each polyphase path to extract the separate signals by

destructive cancellation of the alias terms.

Cancel Claims 6-8.